



# CHOOSE YOUR CHAIN PROBLEM

## Background

We've explored paper chains by making them and testing them. Think about these questions:

- Is there a best paper to use?
- Where did the failure happen? Was it at the glue point? Did the paper tear?
- What might you try to make the paper chain stronger?

Now it's time to put your knowledge of paper chains to work to solve a problem! Read the three challenges below and choose which one you will solve. If you solve it quickly, go ahead and try a different one if we have time. You must document your process using the design log, too!

## ① CANDY HANGER

**Context:** Everyone likes gifts. And, almost everyone likes candy. Homemade gifts can be extra special, but they can take a lot of time to make. So, make a gift that combines store-bought with homemade!

**Challenge:** Design and make a paper chain to hold a bucket full of candy. The candy bucket must be able to safely hang from the chain when suspended from the mounting peg.

### Criteria and Constraints:

1. Your chain must be made of the provided paper strips or strips cut  $\frac{1}{2}$ " x 4" using any of the papers provided.
2. You may not use more than ten paper strips.
3. Your chain cannot be shorter than 5" or longer than 10" when it is at rest on the table.
4. Your chain must securely hold the bucket with 50 pieces of the candy inside.
5. Your chain must connect to the testing clip and hanger.



## ② LOW HANGING FRUIT

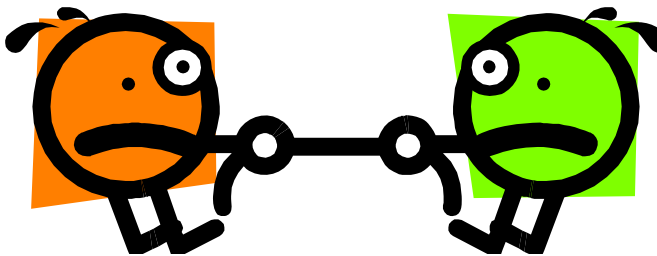
**Context:** There's a basket of fruit on your kitchen counter all of the time. But, no one eats the fruit when it's amongst the kitchen clutter. It almost always rots first. You have a great idea to hang the fruit near the kitchen window instead. It will look tasty. And, family members will choose it more often.



**Challenge:** Design and make a paper chain to hold a basket full of fruit. The basket must be able to safely hang from the chain when suspended from its mount.

### Criteria and Constraints:

1. Your chain must be made of the provided paper strips or strips cut  $\frac{1}{2}$ " x 4" using any of the papers provided.
2. You may not use more than **twelve** paper strips.
3. Your chain cannot be shorter than 5" or longer than 10" when it is at rest on the table.
4. Your chain must securely hold the basket with five apples inside.
5. Your chain must connect to the testing clip and hanger.



## ③ CAPTURE THE Clip

**Context:** You've heard of tug of war, right? In this game, there's one person on each end of paper chain instead of a rope. Each player makes a paper chain. A special clip attaches the two chains together. Each player inserts a pencil in the end loop of his or her chain. When the game begins, the players pull their ends (holding on to the pencil) hoping to be able to cause the other person's chain to fail first. The player who captures the clip, wins the game.

**Challenge:** Design and make a paper chain to enter into the **Capture the Clip** game.

### Criteria and Constraints

1. Your chain must be made of the provided paper strips or strips cut  $\frac{1}{2}$ " x 4" using any of the papers provided.
2. You may not use more than **eight** paper strips.
3. Your chain cannot be shorter than 3" or longer than 5" when it is at rest on the table.
4. You must follow game rules established by the game leader.